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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/004,575	12/04/2001	Michael J. Collins	1700.89A	6616

33197 7590 03/14/2003

STOUT, UXA, BUYAN & MULLINS LLP  
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IRVINE, CA 92618

EXAMINER

GAKH, YELENA G

ART UNIT	PAPER NUMBER
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1743

DATE MAILED: 03/14/2003

12

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/004,575

Applicant(s)

COLLINS, MICHAEL J.

Examiner

Yelena G. Gakh, Ph.D.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on faxed on 03/12/03.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,4-18,21-28 and 31-42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4-18,21-28 and 31-42 is/are rejected.
- 7) ☒ Claim(s) 1,17 and 28 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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### **DETAILED ACTION**

1. The petition for correction of inventorship filed on 12/26/02 is granted. The Decision is attached to the present Office action.
2. The Amendment faxed on 03/12/03 is acknowledged. Claims 43-67 are cancelled without prejudice. Claims 2-3, 19-20 and 29-30 are cancelled. Claims 1, 4-18, 21-28 and 31-42 are pending in the Application.

### ***Response to Amendment***

3. Objection and rejections to the pending claims under 35 U.S.C. 112, first and second paragraphs, established in the first Office action are withdrawn in view of the Amendment and the Applicants' arguments.

A new objection to claims 1, 17 and 28 is set forth in the present Office action.

### ***Claim Objections***

4. Claims 1, 17 and 28 are objected to as containing technically inaccurate expression: "in response to pulsed radio frequencies from the NMR analyzer". Frequencies are just a physical parameter of the electromagnetic field. The correct expression should be "in response to pulsed irradiation at radio frequencies from the NMR analyzer". The appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. **Claims 1, 4-7, 9-10, 13-14, 17-18, 21, 25-28, and 34-40** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kock GB 2,261,072, IDS) in view of Collins (US 4,554,132).

Kock teaches determination of the fat or oil content of substances with high water content, in particular of food, with a low resolution NMR spectrometer by measuring relaxation times. Prior to the NMR measurement, the substance is mixed with a chemical drying agent. Kock in description of the prior art explains that “the determination of the fat content by means of a nuclear magnetic resonance pulse spectrometer of low spectral resolution with a magnetic field strength of maximum about 1T and an average homogeneity of about  $10^{-5}$  across the sample volume and as a result with a proton resonance frequency lower than about 50 MHz ... is not possible with products with a water content of, for example, more than 13% because of the overlap of water and fat signals, since at a higher water content the contribution of the water to the total signal increases highly over proportionally” (p. 1, lines 12-25). “In order to perform such determinations with a low resolution device, it has been necessary hitherto to eliminate the water by pre-drying in an oven, for example in a drying oven, a vacuum oven, a **microwave oven** or the like” (p. 2, lines 13-17).

Kock does not specifically disclose placing a sample on a sample pad transparent to microwave radiation and with features recited in claim 6, and drying the sample with electromagnetic radiation, weighing the sample on the sample pad before and after drying procedure.

Collins teaches a method for determination volatiles and solids in a sample using microwave heating and electronic balance weighing of fat or oil samples. The method comprises placing the sample on a sample pad transparent to microwave radiation and free of protons, of

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low mass, porous, hydrophilic and lipophilic (e.g. glass fiber filter (col. 5, line 5)), weighing the sample on the sample pad before and after drying, and calculating percentage of moisture, and fat and oils in the sample.

It would have been obvious for anyone of ordinary skill at the time the invention was made to use microwave radiation for preliminary drying moisture-containing oil or fat sample for its following analysis with low-resolution proton NMR spectroscopy by determining relaxation times of the sample, as disclosed by Kock, because Kock demonstrated the necessity of drying moisture-containing sample of oil and fat before its NMR analysis to perform such analysis. It would have been obvious to use microwave radiation for drying the sample, because this is a standard technique for drying samples, and because Collins disclosed a very convenient way of drying and weighing the sample in the same place in microwave without transferring it, which improves the accuracy of the method. It would have been obvious for anyone of ordinary skill to calculate the moisture content as disclosed by Collins and the fat content, as disclosed by Kock, because these are complimentary calculations, which give a complete picture of the original content of the sample, and because Kock's NMR method provides the most accurate results regarding the fat and oil content. It would have been obvious for anyone of ordinary skill in the art to partially melt at least a portion of the fat and oil in the sample and keep an increased temperature in the NMR spectrometer, because this gives better resolution of the NMR spectrum.

8. **Claims 11-12, 24-25, and 41-42** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kock in view of Collins as applied to claims 1-7, 9-10, 13-14, 17-21, 25-30, and 34-40 above, and further in view of Jerosch-Herold et al. (US 5,289,124).

Kock in view of Collins fail to teach using wrapping the sample on the pad with a Teflon wrapping sheet.

Jerosch-Herold teaches permeability determination from NMR relaxation measurements for fluids in porous media by placing samples (sandstone core plugs) in a sealed container and imbibing with water for several hours, followed by sealing the samples with Teflon tape and transferring into NMR glass tube for measurements.

It would have been obvious for anyone of ordinary skill to use Teflon wrapper for dried samples in Kock-Collins method, as taught by Jerosch-Herold, because in both cases the Teflon wrapper seals the sample and prevents absorbing additional water or losing moisture content of

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the sample, and because Teflon wrapper is the most suited for proton NMR relaxation studies as well as for microwave heating, because it both is stable to heating and does not give proton NMR signals.

### *Response to Arguments*

9. The Applicants arguments, faxed on 03/12/03, have been fully considered but they are not persuasive.

The fact that Kock offers a better (from his point of view) method of drying a fat sample before NMR analysis comparing to microwave drying still does not teach away from using microwave for this purpose and does not prevent anyone from doing it, especially since Kock mentions microwave technique as one of the conventional methods of drying samples. It is natural that Kock indicates his own method as advantageous over the conventional methods. However, it would have been obvious for anyone of ordinary skills in the art to use microwave as a conventional drying tool for any sample, including fat samples, with the necessity of the drying step preceding the NMR analysis of fat samples emphasized by Kock.

Coolins teaches a very convenient way of drying the sample and measuring its weight in the same place, which would have been an obvious advantage for anyone of ordinary skills in the art when applying modified Kock's method.

Jerosch-Herold teaches using Teflon wrapper for the sample in order to prevent additional water to get into or out of the sample, and it does not matter, if the sample is dry or wet, since the purpose of the Teflon wrapper, as it is indicated by Jerosch-Herold, is to prevent the change of the sample moisture content – exactly what is required for the fat sample analyzed by NMR.

### *Conclusion*

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yelena G. Gakh, Ph.D. whose telephone number is (703) 306-5906. The examiner can normally be reached on 10:00am-6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on (703) 308-4037. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7165 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

YG  
March 12, 2003

  
Jill Warden  
Supervisory Patent Examiner  
Technology Center 1700